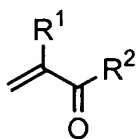
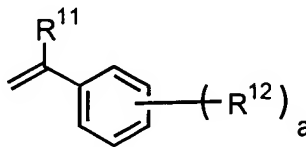


## LISTING OF THE CLAIMS

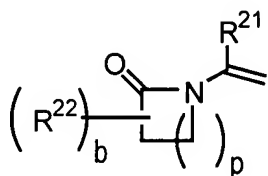
1. (Currently Amended). An antimicrobial lens comprising silver and a polymer comprising a monomer of Formula I, II, III or IV



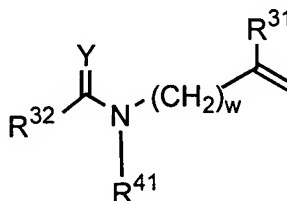
I



II



III



IV

wherein

R¹ is hydrogen or C<sub>1-6</sub>alkyl;

R² is -OR³, -NH-R³, -S-(CH<sub>2</sub>)<sub>d</sub>-R³, or -(CH<sub>2</sub>)<sub>d</sub>-R³, wherein

d is 0-8;

R³ is substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and

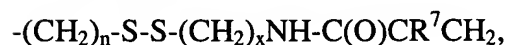
phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



wherein R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



wherein R<sup>7</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



wherein R<sup>8</sup>, R<sup>9</sup>, and R<sup>10</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;

pyrazinyl;

benzimidazolyl;

benzothiazolyl;

benzotriazolyl;

naphthaloyl;

quinolinyl;

indolyl;

thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl,

N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl,  
 N-(aminothiazolyl)sulfonyl,  
 N-(aminotriazolyl)sulfonyl,  
 N-(amino-4-methylpiperidinyl)sulfonyl,  
 N-(amino-4-methylpiperazinyl)sulfonyl,  
 N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,

carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

a is 1-5;

$R^{11}$  is hydrogen or  $C_{1-6}$ alkyl;

$R^{12}$  is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, acetamide, thio $C_{1-6}$ alkylcarbonyl,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyl disulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea,  $-OR^{13}$ ,  $-NH-R^{13}$ ,  $-S-(CH_2)_d-R^{13}$ ,  $-(CH_2)_d-R^{13}$ ,  $-C(O)NH-(CH_2)_d-R^{13}$ ,  $-C(O)-(CH_2)_d-R^{13}$ , substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted phenylthiourea or substituted  $C_{1-6}$ alkylthiourea wherein the substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

where

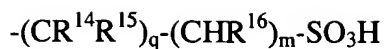
d is 0-8;

$R^{13}$  is thio $C_{1-6}$ alkylcarbonyl;

substituted  $C_{1-6}$ alkyl

where the alkyl substituents are selected from one or more members of the group consisting of hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyldisulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea, substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted  $C_{1-6}$ alkylthiourea and substituted phenylthiourea

wherein the  $C_{1-6}$ alkyldisulfide, phenyldisulfide,  $C_{1-6}$ alkylurea,  $C_{1-6}$ alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

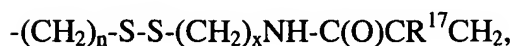


where  $\text{R}^{14}$ ,  $\text{R}^{15}$ , and  $\text{R}^{16}$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and

$\text{C}_{1-6}$ alkyl,

q is 1-6, and

m is 0-6;



where  $\text{R}^{17}$  is hydrogen or  $\text{C}_{1-6}$ alkyl,

n is 1-6, and

x is 1-6;



where  $\text{R}^{18}$ ,  $\text{R}^{19}$ , and  $\text{R}^{20}$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and

$\text{C}_{1-6}$ alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;

pyrazinyl;

benzimidazolyl;

benzothiazolyl;

benzotriazolyl;

naphthaloyl;

quinolinyl;

indolyl;

thiadiazolyl;

triazolyl;

4-methylpiperidin-1-yl;

4-methylpiperazin-1-yl;

substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl,

N-(amino-4-methylpiperazinyl)sulfonyl,  
 N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

b is 1-5;

p is 1-5;

R<sup>21</sup> is hydrogen;



$R^{22}$  is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-SO<sub>3</sub>H, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-P(O)(OH)<sub>2</sub>, -OR<sup>23</sup>, -NH-R<sup>23</sup>, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted, C<sub>1-6</sub>alkylthiourea substituted phenylurea or substituted phenylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile,

where

d is 0-8;

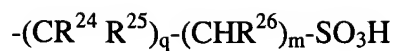
$R^{23}$  is thioC<sub>1-6</sub>alkylcarbonyl,

C<sub>1-6</sub>alkyl,

substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

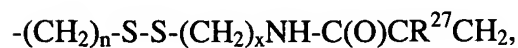


where  $\text{R}^{24}$ ,  $\text{R}^{25}$ , and  $\text{R}^{26}$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and

$\text{C}_{1-6}$ alkyl,

q is 1-6, and

m is 0-6



where  $\text{R}^{27}$  is hydrogen or  $\text{C}_{1-6}$ alkyl,

n is 1-6, and

x is 1-6;



where  $\text{R}^{28}$ ,  $\text{R}^{29}$ , and  $\text{R}^{30}$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and

$\text{C}_{1-6}$ alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;

pyrazinyl;

benzimidazolyl;

benzothiazolyl;

benzotriazolyl;

naphthaloyl;

quinolinyl;

indolyl;

thiadiazolyl;

triazolyl;

4-methylpiperidin-1-yl;

4-methylpiperazin-1-yl;

substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl,

N-(amino-4-methylpiperazinyl)sulfonyl,  
 N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

w is 0-1;

Y is oxygen or sulfur;

R<sup>31</sup> is hydrogen or C<sub>1-6</sub>alkyl;

$R^{32}$  is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thio $C_{1-6}$ alkylcarbonyl, thio $C_{1-6}$ alkylaminocarbonyl,  $-C(O)NH-(CH_2)_d-R^{33}$ ,  $-O-R^{33}$ ,  $-NH-R^{33}$ ,  $-S-(CH_2)_d-R^{33}$ ,  $-(CH_2)_d-R^{33}$ ,  $C_{1-6}$ alkyldisulfide, phenyldisulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea,  $C_{1-6}$ alkylamine, phenylamine, substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted phenylurea, substituted  $C_{1-6}$ alkylamine, substituted phenylamine, substituted phenylthiourea, substituted  $C_{1-6}$ alkylurea or substituted  $C_{1-6}$ alkylthiourea wherein the substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile

where

$d$  is 0-8;

$R^{33}$  is thio $C_{1-6}$ alkylcarbonyl,

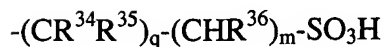
$C_{1-6}$ alkyl,

substituted  $C_{1-6}$ alkyl

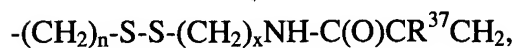
where the alkyl substituents are selected from one or more members of the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyldisulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea, substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted  $C_{1-6}$ alkylthiourea or substituted phenylthiourea

wherein the  $C_{1-6}$ alkyldisulfide, phenyldisulfide,  $C_{1-6}$ alkylurea,  $C_{1-6}$ alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl,

carboxylic acid, sulfonic acid, phosphonic acid, amine,  
amidine, acetamide, and nitrile;



where  $\text{R}^{34}$ ,  $\text{R}^{35}$ , and  $\text{R}^{36}$  are independently selected from the  
group consisting of hydrogen, halogen, hydroxyl, and  
 $\text{C}_{1-6}$ alkyl,  
q is 1-6, and  
m is 0-6;



where  $\text{R}^{37}$  is hydrogen or  $\text{C}_{1-6}$ alkyl,  
n is 1-6, and  
x is 1-6;



where  $\text{R}^{38}$ ,  $\text{R}^{39}$ , and  $\text{R}^{40}$  are independently selected from the  
group consisting of hydrogen, halogen, hydroxyl, and  
 $\text{C}_{1-6}$ alkyl,  
t is 1-6, and  
u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;

pyrazinyl;

benzimidazolyl;

benzothiazolyl;

benzotriazolyl;

naphthaloyl;

quinolinyl;

indolyl;

thiadiazolyl;

triazolyl;

4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl,

N-(aminotriazolyl)sulfonyl,  
 N-(amino-4-methylpiperidinyl)sulfonyl,  
 N-(amino-4-methylpiperazinyl)sulfonyl,  
 N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;



$R^{41}$  is hydrogen,  $C_{1-6}$ alkyl, phenyl,  $C_{1-6}$ alkylcarbonyl, phenylcarbonyl, substituted  $C_{1-6}$ alkyl, substituted phenyl, substituted  $C_{1-6}$ alkylcarbonyl or substituted phenylcarbonyl,

wherein

the substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

wherein said silver reversibly binds to said monomer.

2. (Original) The antimicrobial lens of claim 1 comprising a polymer comprising a monomer of Formula I.

3. (Original) The antimicrobial lens of claim 2 wherein,

$R^1$  is hydrogen or  $C_{1-3}$ alkyl;

$R^2$  is  $NH-R^3$ ;

d is 0

$R^3$  is substituted phenyl,  $-(CR^4 R^5)_q-(CHR^6)_m-SO_3H$ ,

$-(CR^8 R^9)_t-(CHR^{10})_u-P(O)(OH)_2$  or  $-(CH_2)_n-S-S-(CH_2)_x-NH-C(O)CR^7CH_2$ ;

$R^4$  is hydrogen or  $C_{1-3}$ alkyl;

$R^5$  is hydrogen or  $C_{1-3}$ alkyl;

$R^6$  is hydrogen or  $C_{1-3}$ alkyl;

q is 1-3;

m is 1-3;

$R^7$  is hydrogen or  $C_{1-3}$ alkyl;

$R^8$  is hydrogen or  $C_{1-3}$ alkyl;

$R^9$  is hydrogen or  $C_{1-3}$ alkyl;

$R^{10}$  is hydrogen or  $C_{1-3}$ alkyl;

t is 1-3;

u is 1-3;

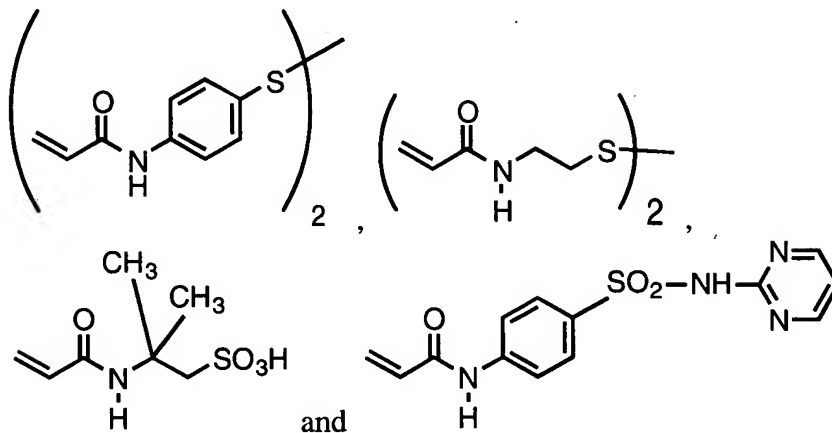
n is 2-4; and

x is 2-4.

4. **(Original)** The antimicrobial lens of claim 2 wherein the lens is a soft contact lens.
5. **(Original)** The antimicrobial lens of claim 2 wherein the monomer of Formula I is present at about 0.01 to about 1.5 weight percent.
6. **(Original)** The antimicrobial lens of claim 2 wherein the monomer of Formula I is present at about 0.01 to about 0.8 weight percent.
7. **(Original)** The antimicrobial lens of claim 2 wherein the monomer of Formula I is present at about 0.01 to about 0.3 weight percent.
8. **(Original)** The antimicrobial lens of claim 2 wherein the monomer of Formula I is present at about 0.01 to about 0.2 weight percent.
9. **(Original)** The antimicrobial lens of claim 2 wherein the monomer of Formula I is present at about 0.01 to about 0.09 weight percent.
10. **(Original)** The antimicrobial lens of claim 2 wherein the lens is a silicone hydrogel.
11. **(Original)** The antimicrobial lens of claim 2 wherein, the lens is etafilcon A, balafilcon, A, aquafilcon A, lenefilcon A, or lotrafilcon A.
12. **(Original)** The antimicrobial lens of claim 2 wherein,
  - $R^1$  is hydrogen or methyl;
  - $R^2$  is  $NH-R^3$ ;
  - $R^3$  is  $-(CR^4R^5)_q-(CHR^6)_m-SO_3H$ ,  $-(CR^8R^9)_t-(CHR^{10})_u-P(O)(OH)_2$  or  $-(CH_2)_n-S-S-(CH_2)_xNH-C(O)CHR^7CH_2$ ;
  - $R^4$  is hydrogen or methyl;

$R^5$  is hydrogen or methyl;  
 $q$  is 1-2;  
 $m$  is 1-2;  
 $R^6$  is hydrogen or methyl;  
 $R^7$  is hydrogen;  
 $R^8$  is hydrogen or methyl;  
 $R^9$  is hydrogen or methyl;  
 $R^{10}$  is hydrogen or methyl;  
 $t$  is 1;  
 $u$  is 1-2;  
 $n$  is 2-3; and  
 $x$  is 2-3.

13. **(Original)** The antimicrobial lens of claim 2 wherein the monomer of Formula I is selected from the group consisting of

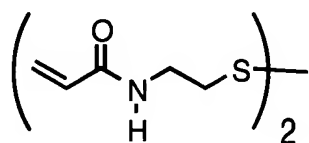


14. **(Original)** The antimicrobial lens of claim 2 wherein silver is present at about 20 ppm to about 1,200 ppm.
15. **(Original)** The antimicrobial lens of claim 2 wherein silver is present at about 20 ppm to about 600 ppm.

16. (Original) The antimicrobial lens of claim 2 wherein silver is present at about 20 ppm to about 150 ppm.

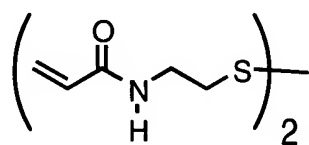
17. (Original) The antimicrobial lens of claim 2 wherein silver is present at about 20 ppm to about 75 ppm.

18. (Original) The antimicrobial lens of claim 2 wherein the lens is a silicone hydrogel and the monomer of Formula I is



19. (Original) The antimicrobial lens of claim 18 wherein silver is present at about 20 ppm to about 150 ppm and the monomer of Formula I is present at about 0.01 to about 1.5 weight percent.

20. (Original) The antimicrobial lens of claim 2 wherein the lens is etafilcon A, balafilcon, A, aquafilcon A, lenefilcon, or lotrafilcon A and the monomer of Formula I is

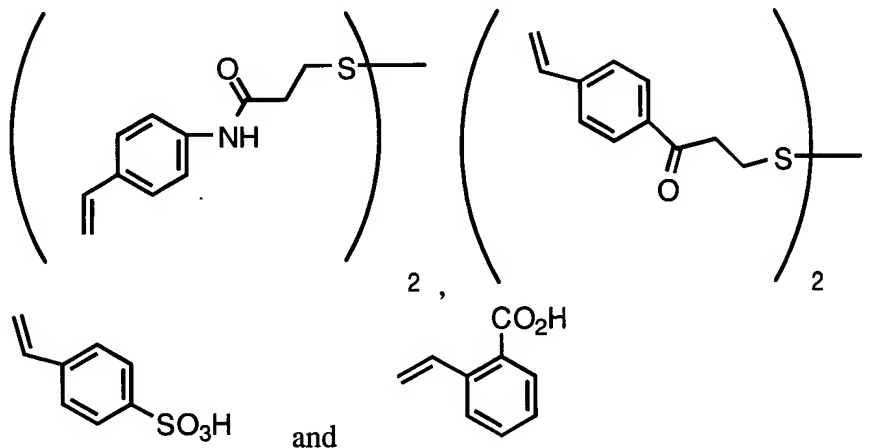


21. (Original) The antimicrobial lens of claim 20 wherein silver is present at about 20 ppm to about 150 ppm and the monomer of Formula I is present at about 0.01 to about 1.5 weight percent.

22. (Original) The antimicrobial lens of claim 21 wherein the lens is etafilcon A.

23. (Original) The antimicrobial lens of claim 21 wherein the lens is aquafilcon A.

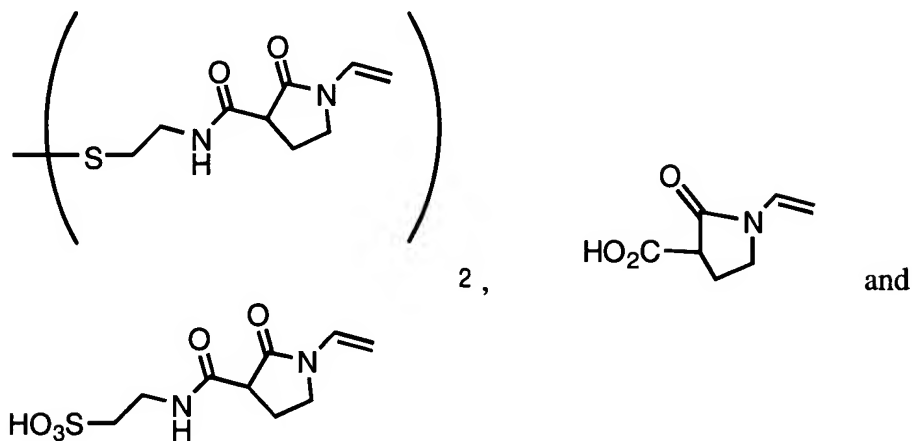
24. **(Original)** The lens of claim 23 wherein silver is present at about 20 ppm to about 75 ppm.
25. **(Withdrawn)** The antimicrobial lens of claim 1 comprising a polymer comprising a monomer of Formula II.
26. **(Withdrawn)** The antimicrobial lens of claim 25 wherein,  
 a is 1-2,  
 $R^{11}$  is hydrogen or  $C_{1-3}$ alkyl,  
 $R^{12}$  is sulfonic acid, carboxylic acid, phosphonic acid,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyldisulfide, substituted phenyldisulfide or  $NH-R^{13}$ ,  
 $R^{13}$  is thio $C_{1-6}$ alkylcarbonyl.
27. **(Withdrawn)** The antimicrobial lens of claim 25 wherein the monomer of Formula II is selected from the group consisting of



28. **(Withdrawn)** The antimicrobial lens of claim 25 wherein the lens is a soft contact lens.
29. **(Withdrawn)** The antimicrobial lens of claim 25 wherein the monomer of Formula II is present at about 0.01 to about 1.5 weight percent.

30. **(Withdrawn)** The antimicrobial lens of claim 25 wherein the monomer of Formula II is present at about 0.01 to about 0.8 weight percent.
31. **(Withdrawn)** The antimicrobial lens of claim 25 wherein the monomer of Formula II is present at about 0.01 to about 0.3 weight percent.
32. **(Withdrawn)** The antimicrobial lens of claim 25 wherein the lens is etafilcon A, balafilcon, A, aquafilcon A, lenefilcon A, or lotrafilcon A.
33. **(Withdrawn)** The antimicrobial lens of claim 25 wherein silver is present at about 20 ppm to about 150 ppm and the monomer of Formula II is present at about 0.01 to about 1.5 weight percent.
34. **(Withdrawn)** The antimicrobial lens of claim 33 wherein the lens is etafilcon A or aquafilcon A.
35. **(Withdrawn)** The antimicrobial lens of claim 1 comprising a polymer comprising a monomer of Formula III.
36. **(Withdrawn)** The antimicrobial lens of claim 35 wherein,  
p is 1-3;  
b is 1-2;  
 $R^{21}$  is hydrogen;  
 $R^{22}$  is sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, substituted phenyldisulfide,  
H<sub>3</sub>OS-(CH<sub>2</sub>)<sub>1-6</sub>NHC(O) or  
(HO)<sub>2</sub>(O)P-(CH<sub>2</sub>)<sub>1-6</sub>NHC(O)-.

37. **(Withdrawn)** The antimicrobial lens of claim 35 wherein the monomer of Formula III is selected from the group consisting of



38. **(Withdrawn)** The antimicrobial lens of claim 35 wherein the lens is a soft contact lens.

39. **(Withdrawn)** The antimicrobial lens of claim 35 wherein the monomer of Formula III is present at about 0.01 to about 1.5 weight percent.

40. **(Withdrawn)** The antimicrobial lens of claim 35 wherein the monomer of Formula III is present at about 0.01 to about 0.8 weight percent.

41. **(Withdrawn)** The antimicrobial lens of claim 35 wherein the monomer of Formula III is present at about 0.01 to about 0.3 weight percent.

42. **(Withdrawn)** The antimicrobial lens of claim 35 wherein, the lens is etafilcon A, balafilcon, A, aquafilcon A, lenefilcon A, or lotrafilcon A.

43. **(Withdrawn)** The antimicrobial lens of claim 35 wherein silver is present at about 20 ppm to about 150 ppm and the monomer of Formula III is present at about 0.01 to about 1.5 weight percent.

44. **(Withdrawn)** The antimicrobial lens of claim 43 wherein the lens is etafilcon A or aquafilcon A.

45. **(Withdrawn)** The antimicrobial lens of claim 1 comprising a polymer comprising a monomer of Formula IV.

46. **(Withdrawn)** The antimicrobial lens of claim 45 wherein,

w is 0-1;

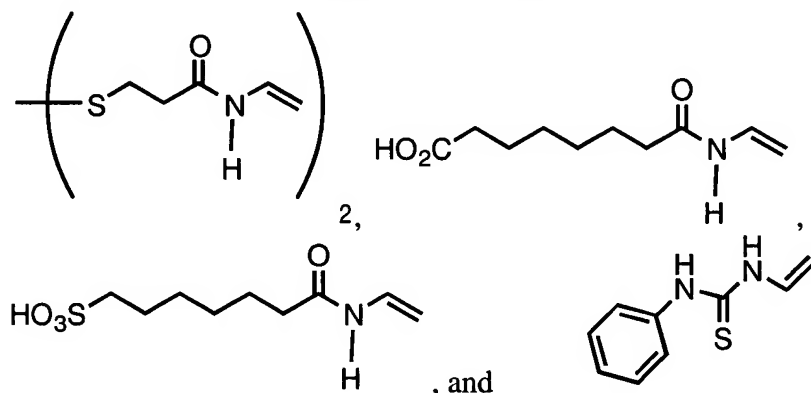
R<sup>31</sup> is hydrogen;

R<sup>32</sup> is amine, C<sub>1-3</sub>alkylamine, phenylamine, substituted phenylamine;

thioC<sub>1-3</sub>alkylcarbonyl;

R<sup>41</sup> is hydrogen.

47. **(Withdrawn)** The antimicrobial lens of claim 45 wherein the monomer of Formula IV is selected from the group consisting of

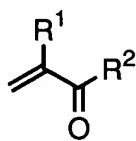


48. **(Withdrawn)** The antimicrobial lens of claim 45 wherein the lens is a soft contact lens.

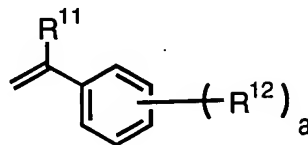
49. **(Withdrawn)** The antimicrobial lens of claim 45 wherein the monomer of Formula IV is present at about 0.01 to about 1.5 weight percent.



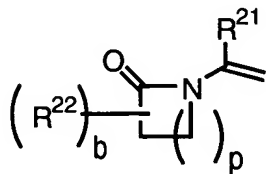
50. **(Withdrawn)** The antimicrobial lens of claim 45 wherein the monomer of Formula IV is present at about 0.01 to about 0.8 weight percent.
51. **(Withdrawn)** The antimicrobial lens of claim 45 wherein the monomer of Formula IV is present at about 0.01 to about 0.3 weight percent.
52. **(Withdrawn)** The antimicrobial lens of claim 45 wherein the lens is etafilcon A, balafilcon A, aquafilcon A, lenefilcon A, or lotrafilcon A.
53. **(Withdrawn)** The antimicrobial lens of claim 45 wherein silver is present at about 20 ppm to about 150 ppm and the monomer of Formula IV is present at about 0.01 to about 1.5 weight percent.
54. **(Withdrawn)** The antimicrobial lens of claim 53 wherein the lens is etafilcon A or aquafilcon A.
55. **(Withdrawn)** A method of producing an antimicrobial lens comprising, silver and a polymer comprising a monomer of Formula I, II, III or IV



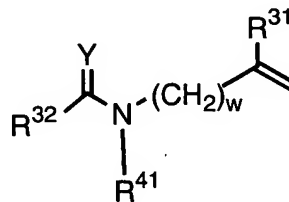
I



II



III



IV

wherein

R¹ is hydrogen or C<sub>1-6</sub>alkyl;

R² is -OR³, -NH-R³, -S-(CH<sub>2</sub>)<sub>d</sub>-R³, or -(CH<sub>2</sub>)<sub>d</sub>-R³, wherein

d is 0-8;

$R^3$  is substituted  $C_{1-6}$ alkyl

where the alkyl substituents are selected from one or more members of the group consisting of carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyldisulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea, substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted  $C_{1-6}$ alkylthiourea, and substituted phenylthiourea

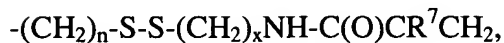
wherein the  $C_{1-6}$ alkyldisulfide, phenyldisulfide,  $C_{1-6}$ alkylurea,  $C_{1-6}$ alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



wherein  $R^4$ ,  $R^5$ , and  $R^6$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and  $C_{1-6}$ alkyl,

q is 1-6, and

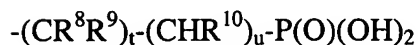
m is 0-6;



wherein  $R^7$  is hydrogen or  $C_{1-6}$ alkyl,

n is 1-6, and

x is 1-6;



wherein  $R^8$ ,  $R^9$ , and  $R^{10}$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and  $C_{1-6}$ alkyl,

t is 1-6, and  
u is 0-6;  
phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or

substituted 4-methylpiperazin-1-yl,  
 wherein the substituents are selected from one or more  
 members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl,  
 halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic  
 acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl,  
 N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl,  
 N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl,  
 N-(aminopyrazine)carbonyl,  
 N-(2-aminopyrimidine)phosphonyl,  
 N-(2-aminopyridine)phosphonyl,  
 N-(aminopyrazine)phosphonyl,  
 N-(aminobenzimidazolyl)sulfonyl,  
 N-(aminobenzothiazolyl)sulfonyl,  
 N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl,  
 N-(aminothiazolyl)sulfonyl,  
 N-(aminotriazolyl)sulfonyl,  
 N-(amino-4-methylpiperidinyl)sulfonyl,  
 N-(amino-4-methylpiperazinyl)sulfonyl,  
 N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,

N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidiny) phosphonyl,  
 N-(amino-4-methylpiperaziny) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

a is 1-5;

R<sup>11</sup> is hydrogen or C<sub>1-6</sub>alkyl;

R<sup>12</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, acetamide,  
 thioC<sub>1-6</sub>alkylcarbonyl, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea,  
 -OR<sup>13</sup>, -NH-R<sup>13</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, -C(O)  
 -(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide,  
 substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted phenylthiourea or  
 substituted C<sub>1-6</sub>alkylthiourea wherein the substituents are selected from the  
 group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid,  
 sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

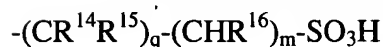
where

d is 0-8;

R<sup>13</sup> is thioC<sub>1-6</sub>alkylcarbonyl;  
 substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea and substituted phenylthiourea

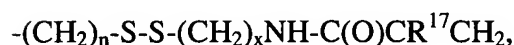
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



where R<sup>17</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



where R<sup>18</sup>, R<sup>19</sup>, and R<sup>20</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and

u is 0-6;

phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl, N-(amino-4-methylpiperazinyl)carbonyl, N-(2-aminobenzimidazolyl)phosphonyl, N-(2-aminobenzothiazolyl)phosphonyl, N-(2-aminobenzotriazolyl)phosphonyl, N-(2-aminoindolyl)phosphonyl, N-(2-aminothiazolyl)phosphonyl, N-(2-aminotriazolyl)phosphonyl, N-(amino-4-methylpiperidinyl) phosphonyl,



N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

b is 1-5;

p is 1-5;

R<sup>21</sup> is hydrogen;

R<sup>22</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-SO<sub>3</sub>H, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-P(O)(OH)<sub>2</sub>, -OR<sup>23</sup>, -NH-R<sup>23</sup>, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted, C<sub>1-6</sub>alkylthiourea substituted phenylurea or substituted phenylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile,

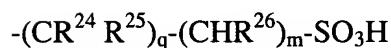
where

d is 0-8;

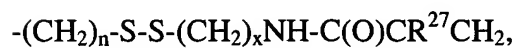
R<sup>23</sup> is thioC<sub>1-6</sub>alkylcarbonyl,  
C<sub>1-6</sub>alkyl,  
substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>24</sup>, R<sup>25</sup>, and R<sup>26</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,  
q is 1-6, and  
m is 0-6



where R<sup>27</sup> is hydrogen or C<sub>1-6</sub>alkyl,  
n is 1-6, and  
x is 1-6;



where R<sup>28</sup>, R<sup>29</sup>, and R<sup>30</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,  
t is 1-6, and

u is 0-6;  
phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl, N-(amino-4-methylpiperazinyl)carbonyl, N-(2-aminobenzimidazolyl)phosphonyl, N-(2-aminobenzothiazolyl)phosphonyl, N-(2-aminobenzotriazolyl)phosphonyl, N-(2-aminoindolyl)phosphonyl, N-(2-aminothiazolyl)phosphonyl, N-(2-aminotriazolyl)phosphonyl, N-(amino-4-methylpiperidinyl) phosphonyl,

N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

w is 0-1;

Y is oxygen or sulfur;

R<sup>31</sup> is hydrogen or C<sub>1-6</sub>alkyl;

R<sup>32</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, -O-R<sup>33</sup>, -NH-R<sup>33</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, C<sub>1-6</sub>alkylamine, phenylamine, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted phenylurea, substituted C<sub>1-6</sub>alkylamine, substituted phenylamine, substituted phenylthiourea, substituted C<sub>1-6</sub>alkylurea or substituted C<sub>1-6</sub>alkylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile

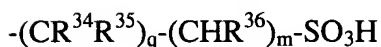
where

d is 0-8;

R<sup>33</sup> is thioC<sub>1-6</sub>alkylcarbonyl,  
C<sub>1-6</sub>alkyl,  
substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea or substituted phenylthiourea

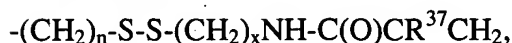
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>34</sup>, R<sup>35</sup>, and R<sup>36</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



where R<sup>37</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



where R<sup>38</sup>, R<sup>39</sup>, and R<sup>40</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and  
u is 0-6;  
phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or

substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl, N-(amino-4-methylpiperazinyl)carbonyl, N-(2-aminobenzimidazolyl)phosphonyl, N-(2-aminobenzothiazolyl)phosphonyl, N-(2-aminobenzotriazolyl)phosphonyl, N-(2-aminoindolyl)phosphonyl, N-(2-aminothiazolyl)phosphonyl,



N-(2-aminotriazolyl)phosphonyl,  
N-(amino-4-methylpiperidiny) phosphonyl,  
N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
phenylthiourea substituents are selected from the group  
consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
carboxylic acid, sulfonic acid, phosphonic acid, amine,  
amidine, acetamide, and nitrile;

R<sup>41</sup> is hydrogen, C<sub>1-6</sub>alkyl, phenyl, C<sub>1-6</sub>alkylcarbonyl, phenylcarbonyl,  
substituted C<sub>1-6</sub>alkyl, substituted phenyl, substituted C<sub>1-6</sub>alkylcarbonyl or  
substituted phenylcarbonyl,

wherein

the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl,  
haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid,  
phosphonic acid, amine, amidine, acetamide, and nitrile.

where the method comprises the steps of

- (a) preparing a lens comprising a monomer of Formula I, II, III or IV and
- (b) treating said lens with a silver solution.

56. **(Withdrawn)** The method of claim 55 wherein the silver solution is  
aqueous silver nitrate having a concentration of about 0.1 µg/mL to about .3 g/mL.

57. **(Withdrawn)** The method of claim 55 wherein, treating comprises soaking the lens comprising a polymer of a monomer of Formula I, II, III or IV with a silver solution.

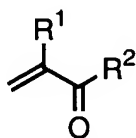
58. **(Withdrawn)** The method of claim 55 wherein, the lens comprising a polymer of a monomer of Formula I, II, III or IV is soaking for about 2 minutes to about 2 hours.

59. **(Withdrawn)** The method of claim 55 wherein, treating comprises storing the lens comprising a polymer of a monomer of Formula I, II, III or IV with a silver solution for about 20 minutes to about 5 years.

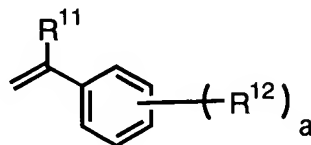
60. **(Withdrawn)** An antimicrobial lens comprising silver and a polymer comprising a binding monomer wherein said antimicrobial lens can reversibly bind silver.

61. **(Withdrawn)** The antimicrobial lens of claim 60 wherein the binding monomer has a stability constant of about 2 to about 7.3.

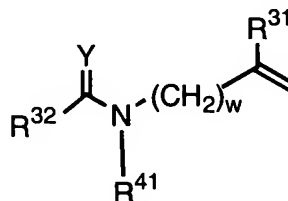
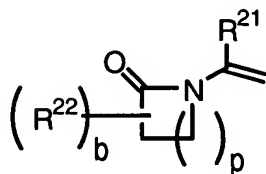
62. **(Withdrawn)** A lens case comprising silver and a polymer comprising a monomer of Formula I, II, III or IV



I



II



wherein

$R^1$  is hydrogen or  $C_{1-6}$ alkyl;

$R^2$  is  $-OR^3$ ,  $-NH-R^3$ ,  $-S-(CH_2)_d-R^3$ , or  $-(CH_2)_d-R^3$ , wherein

$d$  is 0-8;

$R^3$  is substituted  $C_{1-6}$ alkyl

where the alkyl substituents are selected from one or more members of the group consisting of carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyldisulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea, substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted  $C_{1-6}$ alkylthiourea, and substituted phenylthiourea

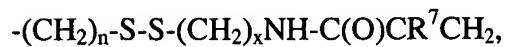
wherein the  $C_{1-6}$ alkyldisulfide, phenyldisulfide,  $C_{1-6}$ alkylurea,  $C_{1-6}$ alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



wherein  $R^4$ ,  $R^5$ , and  $R^6$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and  $C_{1-6}$ alkyl,

q is 1-6, and

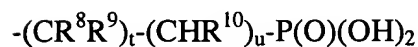
m is 0-6;



wherein  $R^7$  is hydrogen or  $C_{1-6}$ alkyl,

n is 1-6, and

x is 1-6;



wherein  $R^8$ ,  $R^9$ , and  $R^{10}$  are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and  $C_{1-6}$ alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;

pyrazinyl;

benzimidazolyl;

benzothiazolyl;

benzotriazolyl;

naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl,

N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

a is 1-5;

R<sup>11</sup> is hydrogen or C<sub>1-6</sub>alkyl;

$R^{12}$  is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, acetamide, thio $C_{1-6}$ alkylcarbonyl,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyl disulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea,  $-OR^{13}$ ,  $-NH-R^{13}$ ,  $-S-(CH_2)_d-R^{13}$ ,  $-(CH_2)_d-R^{13}$ ,  $-C(O)NH--(CH_2)_d-R^{13}$ ,  $-C(O)-(CH_2)_d-R^{13}$ , substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted phenylthiourea or substituted  $C_{1-6}$ alkylthiourea wherein the substituents are selected from the group consisting of  $C_{1-6}$ alkyl, halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

where

d is 0-8;

$R^{13}$  is thio $C_{1-6}$ alkylcarbonyl;

substituted  $C_{1-6}$ alkyl

where the alkyl substituents are selected from one or more members of the group consisting of hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol,  $C_{1-6}$ alkyldisulfide,  $C_{1-6}$ alkylsulfide, phenyldisulfide, urea,  $C_{1-6}$ alkylurea, phenylurea, thiourea,  $C_{1-6}$ alkylthiourea, phenylthiourea, substituted  $C_{1-6}$ alkyldisulfide, substituted phenyldisulfide, substituted  $C_{1-6}$ alkylurea, substituted phenylurea, substituted  $C_{1-6}$ alkylthiourea and substituted phenylthiourea



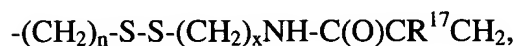
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



where R<sup>17</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



where R<sup>18</sup>, R<sup>19</sup>, and R<sup>20</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;

substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl,

N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,

C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and

phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

b is 1-5;

p is 1-5;

R<sup>21</sup> is hydrogen;

R<sup>22</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-SO<sub>3</sub>H, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-P(O)(OH)<sub>2</sub>, -OR<sup>23</sup>, -NH-R<sup>23</sup>, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted, C<sub>1-6</sub>alkylthiourea substituted phenylurea or substituted phenylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile,

where

d is 0-8;

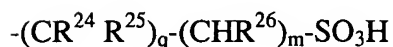
R<sup>23</sup> is thioC<sub>1-6</sub>alkylcarbonyl,

C<sub>1-6</sub>alkyl,

substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea, and substituted phenylthiourea

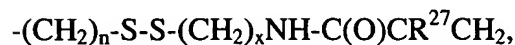
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>24</sup>, R<sup>25</sup>, and R<sup>26</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6



where  $R^{27}$  is hydrogen or  $C_{1-6}$ alkyl,

n is 1-6, and

x is 1-6;



where  $R^{28}$ ,  $R^{29}$ , and  $R^{30}$  are independently selected from the

group consisting of hydrogen, halogen, hydroxyl, and

$C_{1-6}$ alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;

pyrazinyl;

benzimidazolyl;

benzothiazolyl;

benzotriazolyl;

naphthaloyl;

quinolinyl;

indolyl;

thiadiazolyl;

triazolyl;

4-methylpiperidin-1-yl;

4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more  
members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl,  
halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic  
acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl,  
N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl,  
N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl,  
N-(aminopyrazine)carbonyl,



N-(2-aminopyrimidine)phosphonyl,  
N-(2-aminopyridine)phosphonyl,  
N-(aminopyrazine)phosphonyl,  
N-(aminobenzimidazolyl)sulfonyl,  
N-(aminobenzothiazolyl)sulfonyl,  
N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl,  
N-(aminothiazolyl)sulfonyl,  
N-(aminotriazolyl)sulfonyl,  
N-(amino-4-methylpiperidinyl)sulfonyl,  
N-(amino-4-methylpiperazinyl)sulfonyl,  
N-(aminobenzimidazolyl)carbonyl,  
N-(aminobenzothiazolyl)carbonyl,  
N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
N-(aminothiazolyl)carbonyl,  
N-(aminotriazolyl)carbonyl,  
N-(amino-4-methylpiperidinyl)carbonyl,  
N-(amino-4-methylpiperazinyl)carbonyl,  
N-(2-aminobenzimidazolyl)phosphonyl,  
N-(2-aminobenzothiazolyl)phosphonyl,  
N-(2-aminobenzotriazolyl)phosphonyl,  
N-(2-aminoindolyl)phosphonyl,  
N-(2-aminothiazolyl)phosphonyl,

N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidiny) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

w is 0-1;

Y is oxygen or sulfur;

R<sup>31</sup> is hydrogen or C<sub>1-6</sub>alkyl;

R<sup>32</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid,

thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>,

-O-R<sup>33</sup>, -NH-R<sup>33</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, C<sub>1-6</sub>alkyldisulfide,

phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,

phenylthiourea, C<sub>1-6</sub>alkylamine, phenylamine, substituted C<sub>1-6</sub>alkyldisulfide,

substituted phenyldisulfide, substituted phenylurea, substituted C<sub>1-6</sub>alkylamine, substituted phenylamine, substituted phenylthiourea, substituted C<sub>1-6</sub>alkylurea or substituted C<sub>1-6</sub>alkylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile

where

d is 0-8;

R<sup>33</sup> is thioC<sub>1-6</sub>alkylcarbonyl,

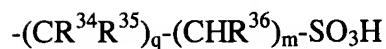
C<sub>1-6</sub>alkyl,

substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea or substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and

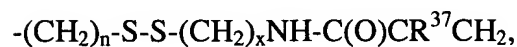
phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>34</sup>, R<sup>35</sup>, and R<sup>36</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



where R<sup>37</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



where R<sup>38</sup>, R<sup>39</sup>, and R<sup>40</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and

u is 0-6;

phenyl;

benzyl;

pyridinyl;

pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;

substituted thiadiazolyl;

substituted triazolyl;

substituted 4-methylpiperidin-1-yl; or

substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl,

N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,  
 N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidinyl) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,

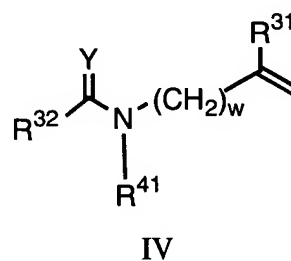
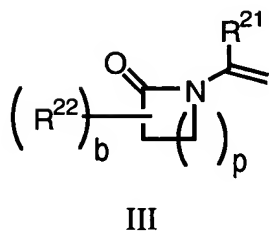
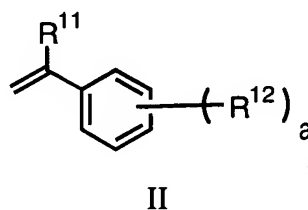
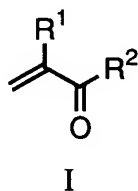
carboxylic acid, sulfonic acid, phosphonic acid, amine,  
amidine, acetamide, and nitrile;

$R^{41}$  is hydrogen,  $C_{1-6}$ alkyl, phenyl,  $C_{1-6}$ alkylcarbonyl, phenylcarbonyl,  
substituted  $C_{1-6}$ alkyl, substituted phenyl, substituted  $C_{1-6}$ alkylcarbonyl or  
substituted phenylcarbonyl,

wherein

the substituents are selected from the group consisting of  $C_{1-6}$ alkyl,  
halo $C_{1-6}$ alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid,  
phosphonic acid, amine, amidine, acetamide, and nitrile.

63. **(Withdrawn)** A method of reducing the adverse effects associated with microbial production in the eye of a mammal comprising providing an antimicrobial lens, wherein said lens comprises, silver and a polymer comprising a monomer of the Formula I, II, III or IV



wherein

$R^1$  is hydrogen or  $C_{1-6}$ alkyl;

$R^2$  is  $-OR^3$ ,  $-NH-R^3$ ,  $-S-(CH_2)_d-R^3$ , or  $-(CH_2)_d-R^3$ , wherein



d is 0-8;

R<sup>3</sup> is substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea, and substituted phenylthiourea

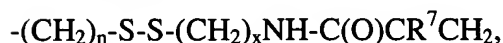
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



wherein R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



wherein R<sup>7</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



wherein R<sup>8</sup>, R<sup>9</sup>, and R<sup>10</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and  
u is 0-6;  
phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or

substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl, N-(amino-4-methylpiperazinyl)carbonyl, N-(2-aminobenzimidazolyl)phosphonyl, N-(2-aminobenzothiazolyl)phosphonyl, N-(2-aminobenzotriazolyl)phosphonyl, N-(2-aminoindolyl)phosphonyl, N-(2-aminothiazolyl)phosphonyl,

N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidiny) phosphonyl,  
 N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

a is 1-5;

R<sup>11</sup> is hydrogen or C<sub>1-6</sub>alkyl;

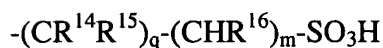
R<sup>12</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, acetamide,  
 thioC<sub>1-6</sub>alkylcarbonyl, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea,  
 -OR<sup>13</sup>, -NH-R<sup>13</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, -C(O)NH--(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, -C(O)  
 -(CH<sub>2</sub>)<sub>d</sub>-R<sup>13</sup>, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide,  
 substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted phenylthiourea or  
 substituted C<sub>1-6</sub>alkylthiourea wherein the substituents are selected from the  
 group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid,  
 sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

where

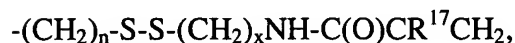
d is 0-8;

R<sup>13</sup> is thioC<sub>1-6</sub>alkylcarbonyl;  
 substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea and substituted phenylthiourea wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>14</sup>, R<sup>15</sup>, and R<sup>16</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,  
q is 1-6, and  
m is 0-6;



where R<sup>17</sup> is hydrogen or C<sub>1-6</sub>alkyl,  
n is 1-6, and  
x is 1-6;



where R<sup>18</sup>, R<sup>19</sup>, and R<sup>20</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,  
t is 1-6, and  
u is 0-6;

phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl, N-(amino-4-methylpiperazinyl)carbonyl, N-(2-aminobenzimidazolyl)phosphonyl, N-(2-aminobenzothiazolyl)phosphonyl, N-(2-aminobenzotriazolyl)phosphonyl, N-(2-aminoindolyl)phosphonyl, N-(2-aminothiazolyl)phosphonyl, N-(2-aminotriazolyl)phosphonyl, N-(amino-4-methylpiperidinyl) phosphonyl,

N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

b is 1-5;

p is 1-5;

R<sup>21</sup> is hydrogen;

R<sup>22</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-SO<sub>3</sub>H, -C(O)NH(CH<sub>2</sub>)<sub>1-6</sub>-P(O)(OH)<sub>2</sub>, -OR<sup>23</sup>, -NH-R<sup>23</sup>, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>23</sup>, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted, C<sub>1-6</sub>alkylthiourea substituted phenylurea or substituted phenylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile,

where

d is 0-8;

R<sup>23</sup> is thioC<sub>1-6</sub>alkylcarbonyl,

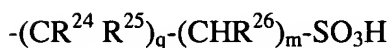
C<sub>1-6</sub>alkyl,

substituted C<sub>1-6</sub>alkyl



where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea, and substituted phenylthiourea

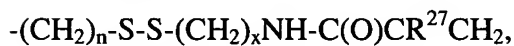
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>24</sup>, R<sup>25</sup>, and R<sup>26</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6



where R<sup>27</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



where R<sup>28</sup>, R<sup>29</sup>, and R<sup>30</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

t is 1-6, and

u is 0-6;  
phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or  
substituted 4-methylpiperazin-1-yl,

wherein the substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl, N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl, N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl, N-(aminopyrazine)carbonyl, N-(2-aminopyrimidine)phosphonyl, N-(2-aminopyridine)phosphonyl, N-(aminopyrazine)phosphonyl, N-(aminobenzimidazolyl)sulfonyl, N-(aminobenzothiazolyl)sulfonyl, N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl, N-(aminothiazolyl)sulfonyl, N-(aminotriazolyl)sulfonyl, N-(amino-4-methylpiperidinyl)sulfonyl, N-(amino-4-methylpiperazinyl)sulfonyl, N-(aminobenzimidazolyl)carbonyl, N-(aminobenzothiazolyl)carbonyl, N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl, N-(aminothiazolyl)carbonyl, N-(aminotriazolyl)carbonyl, N-(amino-4-methylpiperidinyl)carbonyl, N-(amino-4-methylpiperazinyl)carbonyl, N-(2-aminobenzimidazolyl)phosphonyl, N-(2-aminobenzothiazolyl)phosphonyl, N-(2-aminobenzotriazolyl)phosphonyl, N-(2-aminoindolyl)phosphonyl, N-(2-aminothiazolyl)phosphonyl, N-(2-aminotriazolyl)phosphonyl, N-(amino-4-methylpiperidinyl) phosphonyl,

N-(amino-4-methylpiperazinyl) phosphonyl, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;

w is 0-1;

Y is oxygen or sulfur;

R<sup>31</sup> is hydrogen or C<sub>1-6</sub>alkyl;

R<sup>32</sup> is hydroxyl, sulfonic acid, phosphonic acid, carboxylic acid, thioC<sub>1-6</sub>alkylcarbonyl, thioC<sub>1-6</sub>alkylaminocarbonyl, -C(O)NH-(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, -O-R<sup>33</sup>, -NH-R<sup>33</sup>, -S-(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, -(CH<sub>2</sub>)<sub>d</sub>-R<sup>33</sup>, C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, C<sub>1-6</sub>alkylamine, phenylamine, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted phenylurea, substituted C<sub>1-6</sub>alkylamine, substituted phenylamine, substituted phenylthiourea, substituted C<sub>1-6</sub>alkylurea or substituted C<sub>1-6</sub>alkylthiourea wherein the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile

where

d is 0-8;

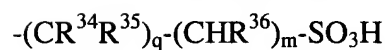
R<sup>33</sup> is thioC<sub>1-6</sub>alkylcarbonyl,

C<sub>1-6</sub>alkyl,

substituted C<sub>1-6</sub>alkyl

where the alkyl substituents are selected from one or more members of the group consisting of C<sub>1-6</sub>alkyl, halo C<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, nitrile, thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyldisulfide, urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea, phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted phenylurea, substituted C<sub>1-6</sub>alkylthiourea or substituted phenylthiourea

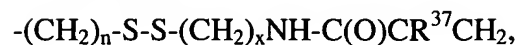
wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide, C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and phenylthiourea substituents are selected from the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid, phosphonic acid, amine, amidine, acetamide, and nitrile;



where R<sup>34</sup>, R<sup>35</sup>, and R<sup>36</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and C<sub>1-6</sub>alkyl,

q is 1-6, and

m is 0-6;



where R<sup>37</sup> is hydrogen or C<sub>1-6</sub>alkyl,

n is 1-6, and

x is 1-6;



where R<sup>38</sup>, R<sup>39</sup>, and R<sup>40</sup> are independently selected from the group consisting of hydrogen, halogen, hydroxyl, and

C<sub>1-6</sub>alkyl,

t is 1-6, and  
u is 0-6;  
phenyl;  
benzyl;  
pyridinyl;  
pyrimidinyl;  
pyrazinyl;  
benzimidazolyl;  
benzothiazolyl;  
benzotriazolyl;  
naphthaloyl;  
quinolinyl;  
indolyl;  
thiadiazolyl;  
triazolyl;  
4-methylpiperidin-1-yl;  
4-methylpiperazin-1-yl;  
substituted phenyl;  
substituted benzyl;  
substituted pyridinyl;  
substituted pyrimidinyl;  
substituted pyrazinyl;  
substituted benzimidazolyl;  
substituted benzothiazolyl;  
substituted benzotriazolyl;  
substituted naphthaloyl;  
substituted quinolinyl;  
substituted indolyl;  
substituted thiadiazolyl;  
substituted triazolyl;  
substituted 4-methylpiperidin-1-yl; or

substituted 4-methylpiperazin-1-yl,  
 wherein the substituents are selected from one or more  
 members of the group consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl,  
 halogen, sulfonic acid, phosphonic acid, hydroxyl, carboxylic  
 acid, amine, amidine, N-(2-aminopyrimidine)sulfonyl,  
 N-(aminopyridine)sulfonyl, N-(aminopyrazine)sulfonyl,  
 N-(2-aminopyrimidine)carbonyl, N-(aminopyridine)carbonyl,  
 N-(aminopyrazine)carbonyl,  
 N-(2-aminopyrimidine)phosphonyl,  
 N-(2-aminopyridine)phosphonyl,  
 N-(aminopyrazine)phosphonyl,  
 N-(aminobenzimidazolyl)sulfonyl,  
 N-(aminobenzothiazolyl)sulfonyl,  
 N-(aminobenzotriazolyl)sulfonyl, N-(aminoindolyl)sulfonyl,  
 N-(aminothiazolyl)sulfonyl,  
 N-(aminotriazolyl)sulfonyl,  
 N-(amino-4-methylpiperidinyl)sulfonyl,  
 N-(amino-4-methylpiperazinyl)sulfonyl,  
 N-(aminobenzimidazolyl)carbonyl,  
 N-(aminobenzothiazolyl)carbonyl,  
 N-(aminobenzotriazolyl)carbonyl, N-(aminoindolyl)carbonyl,  
 N-(aminothiazolyl)carbonyl,  
 N-(aminotriazolyl)carbonyl,  
 N-(amino-4-methylpiperidinyl)carbonyl,  
 N-(amino-4-methylpiperazinyl)carbonyl,  
 N-(2-aminobenzimidazolyl)phosphonyl,  
 N-(2-aminobenzothiazolyl)phosphonyl,  
 N-(2-aminobenzotriazolyl)phosphonyl,  
 N-(2-aminoindolyl)phosphonyl,  
 N-(2-aminothiazolyl)phosphonyl,

N-(2-aminotriazolyl)phosphonyl,  
 N-(amino-4-methylpiperidiny) phosphonyl,  
 N-(amino-4-methylpiperaziny) phosphonyl, acetamide, nitrile,  
 thiol, C<sub>1-6</sub>alkyldisulfide, C<sub>1-6</sub>alkylsulfide, phenyl disulfide,  
 urea, C<sub>1-6</sub>alkylurea, phenylurea, thiourea, C<sub>1-6</sub>alkylthiourea,  
 phenylthiourea, substituted C<sub>1-6</sub>alkyldisulfide, substituted  
 phenyldisulfide, substituted C<sub>1-6</sub>alkylurea, substituted  
 C<sub>1-6</sub>alkylthiourea, substituted phenylurea, and substituted  
 phenylthiourea

wherein the C<sub>1-6</sub>alkyldisulfide, phenyldisulfide,  
 C<sub>1-6</sub>alkylurea, C<sub>1-6</sub>alkylthiourea, phenylurea, and  
 phenylthiourea substituents are selected from the group  
 consisting of C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, halogen, hydroxyl,  
 carboxylic acid, sulfonic acid, phosphonic acid, amine,  
 amidine, acetamide, and nitrile;

R<sup>41</sup> is hydrogen, C<sub>1-6</sub>alkyl, phenyl, C<sub>1-6</sub>alkylcarbonyl, phenylcarbonyl,  
 substituted C<sub>1-6</sub>alkyl, substituted phenyl, substituted C<sub>1-6</sub>alkylcarbonyl or  
 substituted phenylcarbonyl,

wherein

the substituents are selected from the group consisting of C<sub>1-6</sub>alkyl,  
 haloC<sub>1-6</sub>alkyl, halogen, hydroxyl, carboxylic acid, sulfonic acid,  
 phosphonic acid, amine, amidine, acetamide, and nitrile.

64. **(Withdrawn)** An antimicrobial lens comprising silver, wherein said lens has sufficient movement on the eye of a patient.
65. **(Withdrawn)** The lens of claim 64 having about 50 to about 100 percent movement.
66. **(Withdrawn)** The lens of claim 64 having about 75 to about 100 percent movement.



- 67. **(Withdrawn)** The lens of claim 64 having about 90 to about 100 percent movement.
- 68. **(Withdrawn)** An antimicrobial lens comprising silver, wherein said lens inhibits microbial production by at least 25%.
- 69. **(Withdrawn)** The lens of claim 68 wherein said lens inhibits microbial production by at least about 50% to at least about 99%.
- 70. **(Withdrawn)** The lens of claim 68 wherein said lens inhibits microbial production by at least about 80% to at least about 99%.
- 71. **(Withdrawn)** An antimicrobial lens comprising silver, wherein said lens has sufficient movement on the eye of a patient and said lens inhibits microbial production by at least 25%.
- 72. **(Withdrawn)** The lens of claim 71 having about 50% to about 100% movement and said lens inhibits microbial production by 75% to about 100%.